



Morse Micro
reaching farther™

OTP and BCF Selection

APPNOTE-41

Copyright © 2025

Table of Contents

1 Scope	3
2 OTP Boardtypes	4
3 Driver Behavior	5
4 Programming OTP	6
4.2 MM6108-specific requirements	6
4.2 Reading boardtype	6
4.3 Writing boardtype	6
5 Revision History	7

1 Scope

This document describes the steps necessary for Morse Micro's module partners to support automatic selection of Board Configuration Files (BCFs), and to participate in distribution of said BCFs by Morse Micro alongside our drivers.

This document applies to modules manufactured using all variants of the MM6108 and MM810x Wi-Fi HaLow™ chips.

For additional information on the BCF itself and its importance to correct operation of the module, please refer to MM APPNOTE-26: BCF Overview and Impact on System Performance.

2 OTP Boardtypes

The MM6108 and MM810x chips have a small amount of OTP memory used for configuration and calibration data. There is a two-byte field reserved for a “boardtype”. This allows the driver to identify the specific module from software.

Morse Micro will now assign a one-byte prefix to each of our module partners. From this range, module partners should assign a one-byte suffix to each type of module. As these identifiers are used to select the BCF, any modification to the module that requires a new, incompatible BCF should get a new suffix.

For example, the Morse Micro uses a prefix of 0x08 for its own modules, and the MM6108-MF08651-US reference module has a unique identifier of 0x01. The boardtype for this module is thus 0x0801.

3 Driver Behavior

When the Morse Micro driver for Linux is loaded it will select a BCF based on the following logic:

1. If the **bcf** module parameter is set, attempt to load the file named in the modparam.
2. If the **serial** module parameter is set, attempt to load **bcf_<serial>.bin**, where **<serial>** is the value of the modparam.
3. If the **serial** modparam is default, read the OTP boardtype value.
 - a. If the value is **0x0000** (unset) or **0xFFFF** (ignore), then use **bcf_default.bin**
 - b. Attempt to load **bcf_boardtype_xxxx.bin**, where **xxxx** is the boardtype value
4. If boardtype is set and the file does not exist, abort the driver load.

This allows automatic selection of the correct BCF based on boardtype, but retains an ability to override that choice with a module parameter.

4 Programming OTP

The OTP eFuses on the MM6108 and MM810x can be read by the **morse_cli** utility, and read and written using the **morsectrl** utility. While this section will only cover programming the boardtype value, this manufacturing step would be an excellent opportunity to program the MAC address and any private data required in OTP.

4.2 MM6108-specific requirements

Certain electrical conditions must be met when writing to OTP on the MM6108.

Per the datasheet, VDDIO must be $2.5V \pm 10\%$ while programming. Attempting to program OTP with VDDIO outside this specification may result in damage to the OTP block.

4.2 Reading boardtype

To read the boardtype (if any) programmed into OTP, use the following **morsectrl** command:

```
# morsectrl boardtype
0x802
```

If the boardtype is not set, **morsectrl** will return

```
Board type is not set
```

[NOTE: Add output from a board with boardtype set here]

4.3 Writing boardtype

To write the boardtype use the following **morsectrl** command:

```
# morsectrl boardtype -w 0x0801
```

5 Revision History

Release Number	Release Date	Release Notes
01	06/03/2025	Initial Release



Morse Micro Pty. Ltd. - HQ

Level 8, 10-14 Waterloo Street,
Surry Hills, NSW 2010, AUSTRALIA

Morse Micro Inc. – USA

40 Waterworks Way
Irvine, CA 92618, UNITED STATES

Office Locations:

Bangalore, India
Cambridge, UK
Hangzhou, China
Irvine, CA - USA
Picton, NSW - Australia
Portola Valley, CA - USA
Shenzhen, China
Taipei, Taiwan

sales@morsemicro.com

www.morsemicro.com

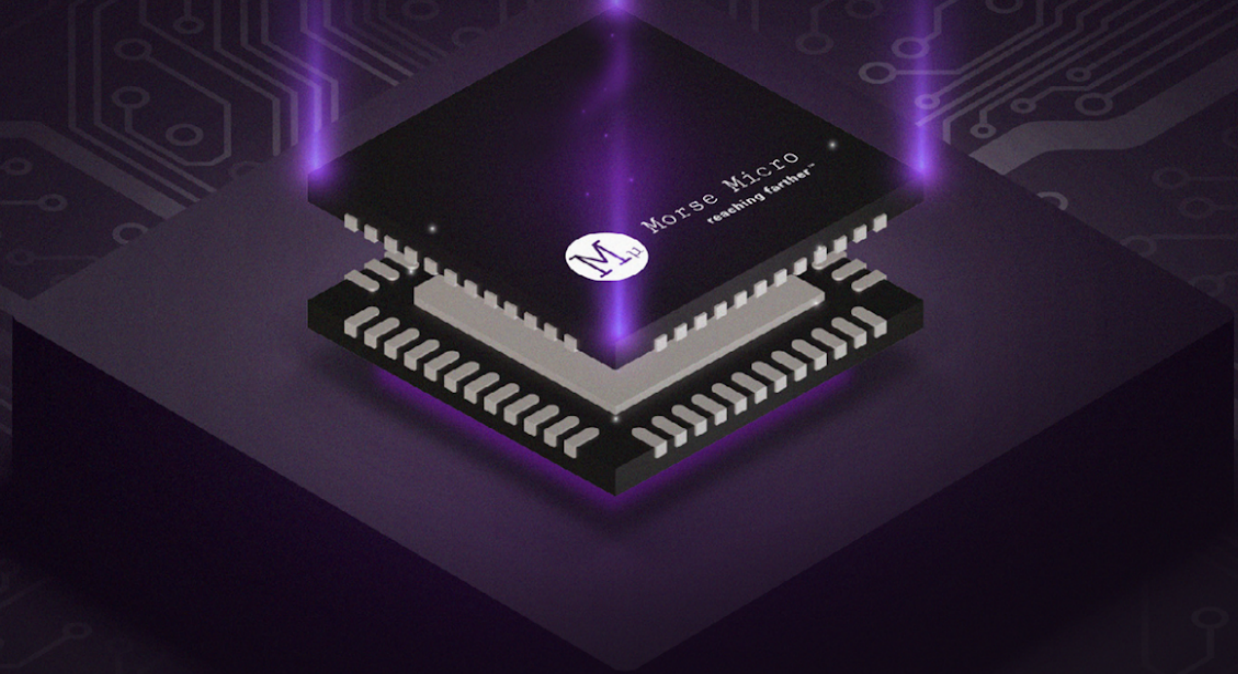
© 2016–2025 Morse Micro Pty. Ltd.

All rights reserved. Morse Micro and the Morse Micro logo are trademarks of Morse Micro Pty. Ltd. All other trademarks and service marks are the property of their respective owners.

Morse Micro makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Morse Micro assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Morse Micro have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Morse Micro. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Morse Micro hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Morse Micro does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Morse Micro, and Morse Micro reserves the right to make any changes to the information in this document or to any products and services at any time without notice.

About Morse Micro

Morse Micro is a leading Wi-Fi HaLow fabless semiconductor company based in Sydney, with global offices. As the world's premier Wi-Fi HaLow company, we pioneer next-gen IoT wireless connectivity solutions. Morse Micro is now sampling its Wi-Fi CERTIFIED HaLow MM6108 production silicon: the fastest, smallest, lowest power and longest-range Wi-Fi HaLow chip available in the market.



Morse Micro
reaching farther™